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RESUME OF 25 YEARS OF
FARM ELECTRIFICATION IN THE UNITED STATES

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In looking back, it is not difficult to see that rural electrification, as a great national movement, had to wait upon the establishing of generating and distribution facilities which insured 24-hour service for practically every town and city of 1,000 or more population. It was necessary to build the electrical foundation for generation and primary distribution of electricity before the great network of rural lines could start to spread over our farming regions.

This electrical foundation was about completed in the early 1920's, and, as this was the foundation for rural electrification, it is easy to see that farm electrification on a national scale could not start prior to that time. However, as soon as this foundation had been laid, the electric operating companies of the nation and farm organizations began seriously to study the question of extending electric service to the farms of this nation. Early in the twenties it was recognized that while farmers wanted electric service and officials of power companies desired to render service, the results then being obtained were not satisfactory. The cost of delivering the small amount of electricity required for the farm home was excessive. The farmer thought he could not afford to pay even the amount necessary to cover delivery costs, and the power companies could not afford to extend lines, and render service for the low revenue then apparent. It became clear that if electricity was to become a part of country life that volume of energy use must be developed so that it would be profitable and practical to both producer and consumer.

I happened to be Executive Secretary of the American Farm Bureau Federation at this time, and I can well remember the early conferences between representatives of the National Electric Light Association (the national association of the electric operating companies) and the Farm Bureau Federation. These meetings were held in the Chicago offices of the Farm Bureau. I believe I sat in on all of these early conferences.

Farm electrification, in its complete sense, was more than an electrical problem, as the electric companies soon found out when they started to enter the field of farm electrification. It was more than an agricultural problem, as the farm experts soon found out when they began working on it. Everybody discovered that it was a problem that required the joint study and cooperation of the farm experts, the electric operating companies, the manufacturers of farm and electrical equipment, and others. Needless to say, it was not to be expected that either agriculture, the electric light and power industry, or any other group working alone could produce maximum results at minimum development expense on this problem. Cooperation was essential for ultimate success.

To promote this cooperative work, the American Farm Bureau Federation and the National Electric Light Association organized the Committee on the Relation of Electricity to Agriculture, which commenced active work on August 1, 1923. It was the function of this cooperative organization to give purpose and direction to a national movement looking toward the solution of the problem of getting electric service at work on the farms of the United States. The original committee was composed of representatives from the following organizations: American Farm Bureau Federation, National Electric Light Association, Power Farming Association, American

Society of Agricultural Engineers, United States Department of Agriculture, United States Department of Commerce, and the United States Department of Interior. The committee was later expanded and included a number of prominent organizations, all of which were interested in farm electrification.

After a few meetings, this committee realized that a great deal of research would have to be conducted to determine the best way of applying electric service to the farm. At that time the farmers' machinery and equipment was designed to be run by windmills, gas engines, horse power, or human power. It was felt that a whole new line of equipment had to be designed and manufactured, which would be best suited to electric power with all of its automatic features and controls. Inasmuch as it would have been very expensive to set up a separate research department, it was decided to make use of the research facilities that were found in most agricultural colleges and experiment stations. This had the advantage of getting a lot of men at work quickly on the problem.

Realizing that the rural electrification problem varied with the types of agriculture found in different parts of the United States and, further, that local initiative constituted the foundation from which progress could be expected, the national committee directed its efforts chiefly toward the formation of state organizations similar in makeup to the national committee but with the primary purpose of instituting and executing investigations which would unearth the possibilities and practicabilities for the use of electricity on the farm. These state organizations were created in 24 states, and Wisconsin, one of the 24, had a very active part in this whole research activity.

It was my lot to be Chairman of the National Committee on the Relation of Electricity to Agriculture during the early years of its existence, and so I had a chance to observe the workings of the national and state committees. We employed a highly-trained agricultural engineer by the name of E. A. White, who spent his whole time working with the research people at the various state agricultural colleges and experiment stations, promoting new research projects in each location, assisting wherever he could, and then seeing to it that wide publicity was given to the results of each research project completed. This was handled by the national committee, through the sending out of thousands of news letters. These were sent to County Agents, and to organizations that were interested in the progress of the research work on farm electrification throughout the nation. Dr. White made a real contribution to rural electrification through the work he did for this committee

This research work continued for years. Among the results is the present type farm electric line, which costs much less to build than similar lines in the urban areas. Many new lines of machinery were developed which did the farm work better and which cost less to install and less to operate. Farming methods were changed in many respects so as to bring about higher efficiency. In my opinion, the work of the people who were on these committees and who cooperated with them made farm electrification possible and advanced its time of completion many years. They also aided in preventing farmers from installing improper equipment in an improper manner and thereby wasting a lot of money for which they got nothing. The work could probably have been done better than it was done, but, from where I sat, I know that it was an outstanding

job in guiding the bringing of a new form of power to the agricultural industry.

The farmers of this nation may not now realize how important to them this early cooperative research work was and still is in giving them a more satisfactory electric service for more jobs, at a lower cost per unit of work done.

At the time we started this research work, only a very few farmers had electric service. Today 85% of the occupied farms in the nation have electric service, and it is available to about 90%. By available I mean the lines are within one-quarter of a mile of the farms. To me it is amazing that in a period of about 25 years electric service has come to nearly all of the farms of this nation. It was a task that called for the expending of billions of dollars for generating plants, transmission lines, and distribution systems. It required the farmers to spend billions of dollars for wiring, equipment, and machinery. All this money has been spent, the property bought and built, and, as far as I can determine, the electric service is quite satisfactory to the user and to the producer.

I know of no other development of this magnitude that was accomplished in such a short time and in such a satisfactory manner, and I want to repeat that the early cooperative work of the electric operating companies, the farm organizations, and others deserves a great deal of credit for this accomplishment.

You here in Wisconsin can be proud of the leadership in this early work by the University of Wisconsin. I remember especially some of the excellent work done on the development of a small hammer mill. Professor Duffee's picture appears alongside of others in one of the very first bulletins gotten out by the National Committee on the Relation of Electricity to Agriculture. The Agricultural

Engineering Department of the University of Wisconsin was one of the big contributors to this early research work mentioned before. Professor Duffee and his men did a lot of effective work on the experimental line built out of Ripon in 1924. They helped the farmers make installations of electrically-driven equipment. They collected valuable information through putting meters on every piece of equipment, having the meters read regularly, cooperating in every way with the farmers in trying to improve each installation. This information, together with information from other colleges, was used by manufacturers and others in bringing out better and more acceptable equipment.

You in Wisconsin can well feel proud of the part you played in bringing about this very important development. The fact that you are celebrating here today the connection of 100,000 farm customers to the lines of the electric operating companies shows that the companies have been active in extending lines to farmers and also it gives us a measure of the huge job done. If to this 100,000 we add the 57,000 farms served by cooperatives and 8,000 more served by municipal utilities, it is evident that the farms of Wisconsin are electrified or have electric service available.

Since the REA co-ops were not organized until after 1936, most of the research work and early cooperative work that was so important to this farm electrification development was done before they started. Therefore, the electric operating companies, not the REA co-ops, are the ones that took an active part and contributed so much to the development of farm electrification in the pioneering days of the 1920's. Nevertheless, the early work done by the National Committees, and the research work conducted by the agricultural colleges, manufacturers, and others, is of just as

much value to the co-ops as it is to the operating companies.

The advances made in learning how to electrify farms before 1936 have helped to speed up the serving of farms by cooperatives in the same manner as they have helped to serve the farm customers of electric operating companies. The work done here at Ripon and on similar lines in other states was of fundamental and basic value to farm users all over the United States, regardless of who furnished the electric service.

I wish to congratulate you all on this 25th birthday of organized rural electrification in Wisconsin and in the United States and also to congratulate you on the connection of 100,000 farm customers to the lines of the electric operating companies in Wisconsin. Good electric services means a great deal to a farmer. It provides for him not only electric light and power, but it also gives him a substitute for the water main and the gas main. Electric service enables him to install an automatic water supply, which gives him running water wherever he wants it, and enables him to have all the advantages of his city cousin. Electric cooking and water heating have developed to the point where they make gas water heating and gas cooking unnecessary. Electricity puts in the hands of the farmer the tools which he can use to materially raise the standard of living that prevailed prior to the 1920's. It enables him to operate his farm with less help or to operate a bigger farm with the same help, both of which are very valuable to him.

I am certainly glad to see that the farmers of this nation have arrived at the point where they have electric service available, and I am very proud of the fact that the American Farm Bureau and the State Farm Bureau Federations have had, from the very start, an interesting part in this great development.

